abcam

ab252953

Anti-Aldolase antibody [EPR23181-39]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR23181-39
Purification technique	Affinity purification Protein A
Concentration	0.497 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Species	Human

Dilution info	1/50
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IP

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Species	Human
Dilution info	1/50
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information ALDOA

Function	Catalyzes the reversible conversion of beta-D-fructose 1,6-bisphosphate (FBP) into two triose phosphate and plays a key role in glycolysis and gluconeogenesis (PubMed:14766013). In addition, may also function as scaffolding protein (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Aldolase also known as fructose-bisphosphate aldolase is an enzyme that plays a critical role in glycolysis catalyzing the reversible cleavage of fructose 16-bisphosphate into glyceraldehyde-3-phosphate and dihydroxyacetone phosphate. Aldolase is a homotetramer with a molecular mass of approximately 158 kDa. It is highly expressed in liver muscle and brain tissues. Aldolase consists of three

	isoforms: aldolase A B and C each predominant in different tissues contributing to tissue-specific roles within the organism.
Biological function summary	Aldolase catalyzes an important reaction in energy metabolism ensuring the continuation of glycolytic flux which is essential for ATP production. Aldolases do not form part of larger protein complexes. However they interact with other enzymes within the glycolytic pathway to facilitate a smooth metabolic flow. Moreover aldolase A plays an additional role in gluconeogenesis the pathway involved in synthesizing glucose from non-carbohydrate sources.
Pathways	Aldolase is an essential part of glycolysis and gluconeogenesis pathways. In glycolysis it partners with enzymes like phosphofructokinase and enolase to breakdown glucose for energy production. During gluconeogenesis aldolase works with enzymes including fructose-16-bisphosphatase to create glucose vital for maintaining blood sugar levels during fasting. Through these pathways aldolase ensures balance between energy-producing and energy-consuming states within the cell.
Associated diseases and disorders	Mutations or deficiencies in aldolase particularly aldolase A have been linked to glycogen storage disease type XII which results in muscle weakness and exercise intolerance. Aldolase B deficiency is known to cause hereditary fructose intolerance leading to liver and renal complications. These conditions highlight the importance of aldolase in maintaining metabolic health with implications for proteins within the same pathways potentially affecting their functions and expression levels.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

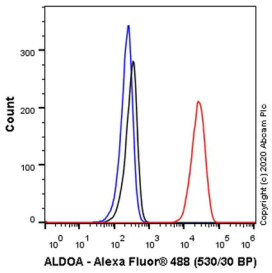
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

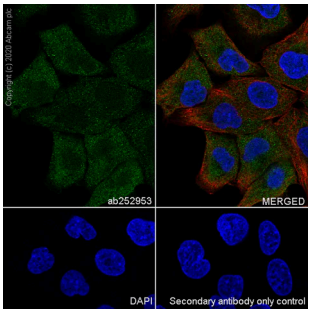
15 product images



Flow Cytometry (Intracellular) - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Aldolase Flow Cytometry (Intracellular) staining using rabbit Anti-Aldolase antibody

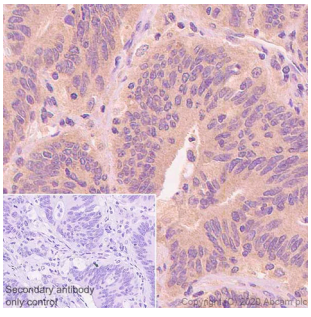
Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized A549 (Human lung carcinoma epithelial cell) cells labelling Aldolase with ab252953 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Aldolase Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Aldolase antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized A549 cells labelling Aldolase with ab252953 at 1/50 dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 (2 ug/ml) dilution (Green). Confocal image showing strong cytoplasmic and weak nuclear staining in A549 cells. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 (2 ug/ml) dilution.

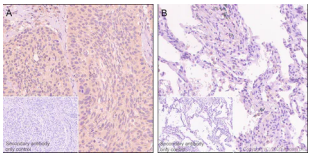


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Aldolase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Aldolase antibody

Immunohistochemical analysis of paraffin-embedded Human colon cancer tissue labeling Aldolase with ab252953 at 1/100 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining in human colon cancer (PMID: 29453983). The section was incubated with ab252953 for 20 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

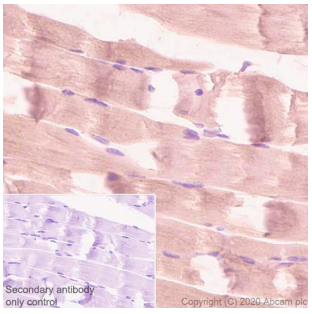


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Aldolase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Aldolase antibody

Immunohistochemical analysis of paraffin-embedded Human lung cancer (A) and its adjacent noncancerous tissue (B) tissue labeling Aldolase with ab252953 at 1/100 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining in human lung cancer (A) while weak or negative staining in its adjacent noncancerous tissue (B) (PMID: 24465716). The section was incubated with ab252953 for 20 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

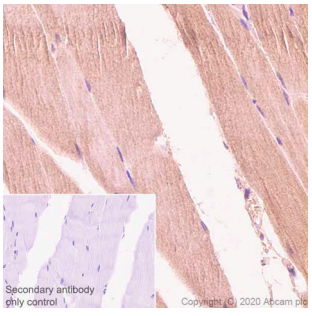


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Aldolase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Aldolase antibody

Immunohistochemical analysis of paraffin-embedded Rat skeletal muscle tissue labeling Aldolase with ab252953 at 1/50 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining in rat skeletal muscle (PMID: 18676612). The section was incubated with ab252953 for 20 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

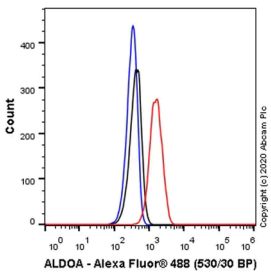


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Aldolase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Aldolase antibody

Immunohistochemical analysis of paraffin-embedded Mouse skeletal muscle tissue labeling Aldolase with ab252953 at 1/50 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining in mouse skeletal muscle (PMID: 18676612). The section was incubated with ab252953 for 20 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

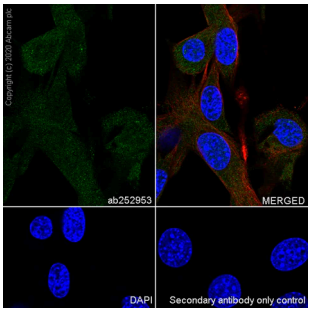
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Flow Cytometry (Intracellular) - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Aldolase Flow Cytometry (Intracellular) staining using rabbit Anti-Aldolase antibody

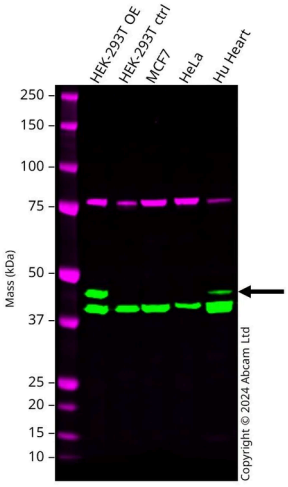
Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized NIH/3T3 (Mouse embryonic fibroblast) cells labelling Aldolase with ab252953 at 1/50 dilution (1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Aldolase Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Aldolase antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized NIH/3T3 cells labelling Aldolase with ab252953 at 1/50 dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 (2 ug/ml) dilution (Green). Confocal image showing strong cytoplasmic and weak nuclear staining in NIH/3T3 cells. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 (2 ug/ml) dilution.



Western blot - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Western blot: Anti-ALDOA antibody [EPR23181-39] (ab252953) staining at 1/1000 dilution, shown in green; Mouse anti-CANX [CANX/1543] (ab238078) loading control staining at 1/20000 dilution, shown in magenta. In Western blot, ab252953 was shown to bind specifically to ALDOA. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-Aldolase antibody [EPR23181-39] (ab252953) at 1/1000 dilution

Lane 1:
HEK-293T overexpressing ALDOA cell lysate at 20 µg

Lane 2:
HEK-293T control cell lysate at 20 µg

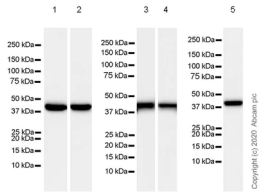
Lane 3:
MCF7 cell lysate at 20 µg

Lane 4:
HeLa cell lysate at 20 µg

Lane 5:
Human heart cell lysate at 20 µg

Performed under reducing conditions.

Observed band size: 45 kDa



Western blot - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Aldolase Western blot staining using rabbit Anti-Aldolase antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
Exposure times: Lanes 1-3: 3 seconds; Lane 4-5: 5.5 seconds.

All lanes:
Western blot - Anti-Aldolase antibody [EPR23181-39] (ab252953) at 1/1000 dilution

Lane 1:
Human brain tissue lysate at 40 µg

Lane 2:
Human skeletal muscle tissue lysate at 40 µg

Lane 3:
Mouse brain tissue lysate at 40 µg

Lane 4:
Mouse skeletal muscle tissue lysate at 40 µg

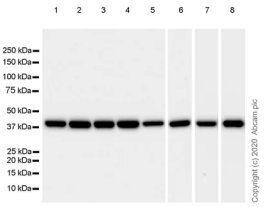
Lane 5:
Human colon cancer tissue lysate at 40 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/50000 dilution

Predicted band size: 39 kDa

Observed band size: 39 kDa



Western blot - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Aldolase Western blot staining using rabbit Anti-Aldolase antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
Exposure times: Lanes 1-6: 5.5 seconds; Lanes 7-8: 26 seconds.

All lanes:
Western blot - Anti-Aldolase antibody [EPR23181-39] (ab252953) at 1/1000 dilution

Lane 1:
MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate at 40 µg

Lane 2:
HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate at 40 µg

Lane 3:
SH-SY5Y (human neuroblastoma epithelial cell) whole cell lysate at 40 µg

Lane 4:
THP-1 (human monocytic leukemia monocyte) whole cell lysate at 40 µg

Lane 5:
C2C12 (mouse myoblasts myoblast) whole cell lysate at 40 µg

Lane 6:
C6 (rat glial tumor glial cell) whole cell lysate at 40 µg

Lane 7:
A549 (human lu carcinoma epithelial cell) whole cell lysate at 40 µg

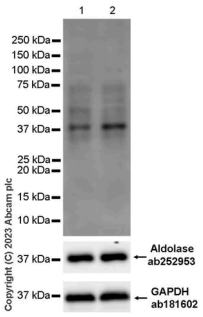
Lane 8:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 40 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/50000 dilution

Predicted band size: 39 kDa

Observed band size: 39 kDa



Western blot - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Blocking and diluting buffer and concentration: 5% NFDM/TBST
This blot was developed using a high sensitivity ECL substrate. The high-sensitivity ECL substrate used allows for the detection of proteins in the mid-femtogram range.

In Western blot, anti-GAPDH antibody (ab181602) loading control staining at 1/200000 dilution, anti-Aldolase antibody (ab252953) staining at 1/1000 dilution.

All lanes:
Western blot - Anti-Aldolase A / B/ C (lactyl K147) antibody [EPR24696-317] (ab313325) at 1/1000 dilution

Lane 1:
Untreated NCI-H1299 (human lung carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
NCI-H1299 treated with 100nM Rotenone for 24h, whole cell lysate at 20 µg

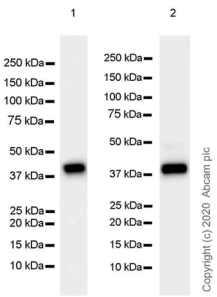
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Developed using the ECL technique.

Observed band size: 39 kDa

Exposure time: 59s



Western blot - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Aldolase Western blot staining using rabbit Anti-Aldolase antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
Exposure times: Lane 1: 10 seconds; Lane 2: 3 seconds.

All lanes:
Western blot - Anti-Aldolase antibody [EPR23181-39] (ab252953) at 1/1000 dilution

Lane 1:
Rat brain tissue lysate at 20 µg

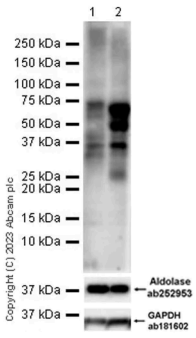
Lane 2:
Rat skeletal muscle tissue lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 39 kDa

Observed band size: 39 kDa



Western blot - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Blocking and diluting buffer and concentration: 5% NFDM/TBST
This blot was developed using a high sensitivity ECL substrate. The high-sensitivity ECL substrate used allows for the detection of proteins in the mid-femtogram range.

The identities of the higher MW bands between 50 and 70 kDa are unknown.

In Western blot, anti-GAPDH antibody (ab181602) loading control staining at 1/200000 dilution, anti-Aldolase antibody (ab252953) staining at 1/1000 dilution.

All lanes:
Western blot - Anti-Aldolase A / B/ C (lactyl K147) antibody [EPR24696-317] (ab313325) at 1/1000 dilution

Lane 1:
Untreated C6 (rat glial tumor glial cell) whole cell lysate at 20 µg

Lane 2:
C6 treated with 100nM Rotenone for 24h, whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Developed using the ECL technique.

Observed band size: 39 kDa

Exposure time: 180s

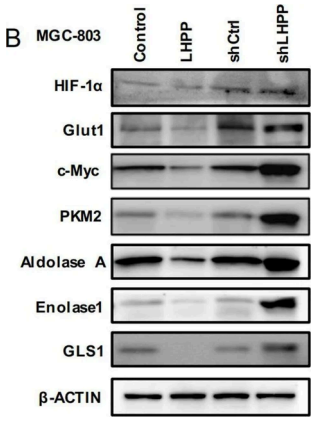


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Western blot - Anti-Aldolase antibody [EPR23181-39] (ab252953)

Aldolase Western blot staining using rabbit Anti-Aldolase antibody

Aldolase western blot using anti-Aldolase antibody [EPR23181-39] ab252953. Publication image and figure legend from Lin, J. X., Lian, N. Z., et al., 2022, Cell Death Dis, PubMed 35568711.

ab252953 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab252953 please see the product overview.

LHPP suppresses aerobic glycolysis.A Relative mRNA expression levels of glycolytic genes and glutamine transporters in LHPP-overexpressing or LHPP-knockdown MGC-803 cells and control cells by qPCR. B Protein expression levels of glycolytic genes and glutamine transporters in LHPP-overexpressing or LHPP-knockdown MGC-803 cells and control cells on western blot. C IHC staining of LHPP and HIF1A in TMAs and their correlation. Scale bars = 100 μm. D Oxygen consumption rate and extracellular acidification rate of LHPP-overexpressing or LHPP-knockdown MGC-803 cells and control cells were measured using the Seahorse Bioscience XF96 analyser. E Human phosphokinase microarray assay analysis of the conditioned medium from stably transfected HGC-27 cells. A summary of the relative signal intensities of the indicated proteins is shown. G, H IHC staining of LHPP and p-GSK3b in TMAs and their correlation. Scale bars = 200 μm. F Combined LHPP and GSK3b by co-immunoprecipitation. I Protein expression levels of the Wnt pathway in LHPP-overexpressing or LHPP-knockdown MGC-803 cells and control cells on western blot. Data were analyzed using the Wilcoxon test. *p < 0.05, **p < 0.01, ***p < 0.001, KEGG Kyoto encyclopaedia of genes and genomes, GO gene ontology, qPCR quantitative polymerase chain reaction, IHC immunohistochemical, TMA tissue microarray.

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